UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,642	03/31/2000	Peter Dyke	583-1031	1772

7590 05/29/2003

William M Lee Jr
Lee Man Smith McWilliams Sweeney & Ohlson
PO Box 2786
Chicago, IL 60690-2786

EXAMINER
MOLINARI, MICHAEL J

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/540,642	Applicant(s) DYKE ET AL.
	Examiner Michael J Molinari	Art Unit 2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 3 July 2000 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The references listed in the IDS are missing. The Examiner requests that Applicant please resubmit copies of the cited documents.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs are not considered to be statutory subject matter. However, a computer-readable medium containing computer-readable instructions would be considered statutory subject matter.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Dudziak et al. (U.S. Patent No. 6,470,032).

4. Referring to claim 9, Dudziak et al. disclose a method of operating an outstation (ONU, see Figure 1, #114) connectable, in use, to a communication exchange (see Figure 1, #106) through an optical communication resource (see Figure 1, #118), the method comprising: receiving data packetised in an Internet Protocol (IP) format; coding the packet-switched formatted data into a line code (see Figure 5, #506 and column 6, lines 11-23); modulating the line code onto an optical carrier; and applying a resultant modulated optical carrier to the optical communication resource, such that the packet-switched formatted data, in use, is utilized to support media access control of the outstation (see Figure 5 and see column 6, lines 11-23) and wherein: the packet-switched formatted data realizes a transport mechanism through the optical communication resource (see Figure 1); and the packet-switched formatted data is passed to and from the optical communication resource such that packet-switched formatted data is transported, in use, directly between the outstation and the communication exchange (see Figure 1).

5. Referring to claim 10, Dudziak et al. disclose an outstation (ONU, see Figure 1, #114) connectable, in use, to a communication exchange through an optical communication resource (Splitter/Combiner, see Figure 1, #118), the outstation comprising: means for receiving data packetised into a packet-switched protocol format (see Figure 5, #504); means for coding the packet-switched formatted data into a line code (see Figure 5, #506); means for modulating the

line code onto an optical carrier (see Figure 5, #502); and means for applying a resultant modulated optical carrier to the optical communication resource (see Figure 5, #502), such that the packet-switched formatted data, in use, is utilized to support media access control of the outstation and wherein: the packet-switched formatted data realizes a transport mechanism through the optical communication resource, and the packet-switched formatted data is passed to and from the optical communication resource such that packet-switched formatted data is transported, in use, directly between the outstation and the communication exchange (see Figure 1).

6. Referring to claim 11, Dudziak et al. disclose that the packet-switched protocol is Internet Protocol (IP) (see column 1, lines 48-50).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-8 and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudziak et al. (U.S. Patent No. 6,470,032) in view of Fischer et al. (U.S. Patent Application Publication No. US 2002/0032001 A1).

9. Referring to claim 1, Dudziak et al. disclose a communication system comprising optical line termination (OLT) equipment (see Figure 1, #106) coupled to a plurality of outstations (see Figure 1, #114) through an optical communication resource (see Figure 1, #114), the optical

communication resource including an optical splitter providing a point-to-multipoint concentration/distribution function between the OLT equipment and the plurality of outstations (see Figure 1), wherein each of the plurality of outstations is adapted to pass data in a packet-switched format to and from the optical communication resource such that packet-switched encoded data is transported, in use, directly between the outstations and the OLT equipment (see column 2, lines 25-37, which shows that the system is used to transmit packet-based data). Dudziak et al. further teach that their passive optical network operates based on gigabit Ethernet (see column 1, lines 31-40 and column 2, lines 35-37), which is a technology that requires the detection of collisions in the medium. However, Dudziak et al. differ from claim 1 in that they fail to disclose that the collision detection logic is located in the OLT. However, the detection of collisions at the terminal equipment is well known in the art. For example, Fischer et al. teach a method wherein collisions are detected in the terminal equipment (see paragraph 0056), which has the advantage of enabling the system to have a central location for controlling collisions. One skilled in the art would have recognized the advantage of locating the collision detection logic in the terminal as taught by Fischer et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of collision detection logic into the terminal equipment as taught by Fischer et al. into the invention of Dudziak et al. to achieve the advantage of having a central location for controlling collisions.

10. Referring to claim 2, Fischer et al. disclose that the collision detection logic includes means for identifying invalid recovered data bits (see paragraph 0040).

11. Referring to claim 3, Dudziak et al. disclose that the packet-switched encoded data is Internet Protocol (IP) (see column 1, lines 48-50).

12. Referring to claim 4, Dudziak et al. disclose that the plurality of outstations each include a signal processor arranged, in use, to code incident IP packets within a predetermined line code (see Figure 5, #506).

13. Referring to claim 5, Dudziak et al. disclose optical line termination (OLT) equipment (see Figure 1, #106) responsive, in use, to a modulated optical carrier supporting a packet-switched protocol coded into a predetermined line code format (see column 2, lines 35-37), the modulated optical carrier emanating from at least one outstation (ONU, see Figure 1, #114). Dudziak et al. further teach that their passive optical network operates based on gigabit Ethernet (see column 1, lines 31-40 and column 2, lines 35-37), which is a technology that requires the detection of collisions in the medium. However, Dudziak et al. differ from claim 1 in that they fail to disclose that the collision detection logic is located in the OLT. However, the detection of collisions at the terminal equipment is well known in the art. For example, Fischer et al. teach a method wherein collisions are detected in the terminal equipment (see paragraph 0056), which has the advantage of enabling the system to have a central location for controlling collisions. One skilled in the art would have recognized the advantage of locating the collision detection logic in the terminal as taught by Fischer et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of collision detection logic into the terminal equipment as taught by Fischer et al. into the invention of Dudziak et al. to achieve the advantage of having a central location for controlling collisions.

14. Referring to claim 6, Dudziak et al. disclose means for coding packet-switched protocol packets into a predetermined line code format (see Figure 5, #506); and means for modulating the predetermined line code onto an optical carrier (see Figure 5, #502); wherein packet-switched

coded data realizes a transport mechanism through an optical communication resource connectable, in use, to the OLT equipment (see Figure 1); and wherein the OLT equipment is adapted to pass data in a packet-switched format to and from the optical communication resource such that packet-switched encoded data is transported, in use, directly between the OLT equipment and an outstation (see Figure 1).

15. Referring to claim 7, Fischer et al. disclose means for notifying outstations of a data collision event, said means for notifying responsive to the collision detection logic (see paragraph 0056).

16. Referring to claim 8, Dudziak et al. disclose that the packet-switched protocol is Internet Protocol (IP) (see column 1, lines 48-50).

17. Referring to claim 12, Dudziak et al. disclose a method of operating base station equipment for a communication exchange, the method comprising: receiving an optical carrier modulated with a line code supporting packet-switched protocol packaged data (see Figure 4 and see column 5, lines 32-55). Dudziak et al. further teach that their passive optical network operates based on gigabit Ethernet (see column 1, lines 31-40 and column 2, lines 35-37), which is a technology that requires the detection of collisions in the medium. However, Dudziak et al. differ from claim 1 in that they fail to disclose that the collision detection logic is located in the OLT. However, the detection of collisions at the terminal equipment is well known in the art. For example, Fischer et al. teach a method wherein collisions are detected in the terminal equipment (see paragraph 0056), which has the advantage of enabling the system to have a central location for controlling collisions. One skilled in the art would have recognized the advantage of locating the collision detection logic in the terminal as taught by Fischer et al.

Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of collision detection logic into the terminal equipment as taught by Fischer et al. into the invention of Dudziak et al. to achieve the advantage of having a central location for controlling collisions.

18. Referring to claim 13, Dudziak et al. disclose coding packet-switched packets into a line code format; and modulating the predetermined line code onto an optical carrier; wherein packet-switched encoded data realizes a transport mechanism through the optical communication resource; and wherein the base station is adapted to pass data in a packet-switched format to and from the optical communication resource such that packet-switched encoded data is transported, in use, directly between the base station and an outstation (see Figures 1 and 4 and see column 5, lines 32-55 and column 6, lines 11-23).

19. Referring to claim 14, disclose that the packet-switched protocol is Internet Protocol (IP) (see column 1, lines 48-50).

20. Referring to claim 15, Dudziak et al. disclose a method of communicating information between outstations (ONU, see Figure 1, #114) and optical line termination equipment (see Figure 1, #106) via an optical fiber (see Figure 1, #116), the method comprising: receiving data packetized in a packet-switched format; coding the packet-switched formatted data into a line code; modulating the line code onto an optical carrier; applying a resultant modulated optical carrier to the optical communication resource, wherein the packet-switched formatted data realizes a transport mechanism through the optical fiber and the packet-switched formatted data is passed to and from the optical communication resource such that packet-switched formatted data is transported, in use, directly between the outstations and the optical line termination

equipment (see Figures 1 and 4-5; see column 5, lines 32-55 and column 6, lines 11-23). Dudziak et al. further teach that their passive optical network operates based on gigabit Ethernet (see column 1, lines 31-40 and column 2, lines 35-37), which is a technology that requires the detection of collisions in the medium. However, Dudziak et al. differ from claim 1 in that they fail to disclose that the collision detection logic is located in the OLT. However, the detection of collisions at the terminal equipment is well known in the art. For example, Fischer et al. teach a method wherein collisions are detected in the terminal equipment (see paragraph 0056), which has the advantage of enabling the system to have a central location for controlling collisions. One skilled in the art would have recognized the advantage of locating the collision detection logic in the terminal as taught by Fischer et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of collision detection logic into the terminal equipment as taught by Fischer et al. into the invention of Dudziak et al. to achieve the advantage of having a central location for controlling collisions.

21. Referring to claim 16, Dudziak et al. disclose that the packet-switched protocol is Internet Protocol (IP) (see column 1, lines 48-50).

22. Referring to claim 17, Dudziak et al. disclose a computer program product for controlling exchange equipment to administer media access control of a plurality of optical outstations coupled to the exchange equipment through an optical fiber, the computer program product comprising: code that directs the exchange equipment to receive an optical carrier modulated with a line code supporting packet-switched protocol packet data (see Figures 1 and 4 and see column 5, lines 32-55). Dudziak et al. further teach that their passive optical network operates based on gigabit Ethernet (see column 1, lines 31-40 and column 2, lines 35-37), which is a

technology that requires the detection of collisions in the medium. However, Dudziak et al. differ from claim 1 in that they fail to disclose that the collision detection logic is located in the OLT. However, the detection of collisions at the terminal equipment is well known in the art. For example, Fischer et al. teach a method wherein collisions are detected in the terminal equipment (see paragraph 0056), which has the advantage of enabling the system to have a central location for controlling collisions. One skilled in the art would have recognized the advantage of locating the collision detection logic in the terminal as taught by Fischer et al. Therefore, it would have been obvious to a person with ordinary skill in the art at the time of the invention to incorporate the use of collision detection logic into the terminal equipment as taught by Fischer et al. into the invention of Dudziak et al. to achieve the advantage of having a central location for controlling collisions.

23. Referring to claim 18, Dudziak et al. disclose that the packet-switched protocol is Internet Protocol (IP) (see column 1, lines 48-50).

24. Referring to claim 19, Dudziak et al. disclose code that directs the exchange equipment to code IP packets into a line code format; and code that directs the exchange equipment to modulate the line code onto an optical carrier; wherein IP encoded data realizes a transport mechanism through the optical fiber; code that directs the exchange equipment to pass data in an IP format to and from the optical fiber such that IP encoded data is transported, in use, directly between the exchange equipment and at least one outstation (see column 5, lines 32-55).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

26. U.S. Patent No. 6,493,335 to Darcie et al. teaches a Passive Optical Network architecture that uses a CSMA/CD protocol.

27. U.S. Patent No. 4,894,819 to Kondo et al. teaches an optical star coupler using a CSMA/CD protocol.

28. U.S. Patent No. 5,390,181 to Campbell et al. teaches an optical collision detection method suitable for use in passive optical networks.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Molinari whose telephone number is (703) 305-5742. The examiner can normally be reached on Monday-Friday 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

MJM

Michael Joseph Molinari
May 20, 2003

ALPUS H. HSU
PRIMARY EXAMINER